

What is claimed is:

1. An information display system for targeting information to a plurality of viewers proximate to an information display, the system comprising:
  - at least one sensor for determining features of a subset of the plurality of viewers, comprising at least one of:
    - a visual sensor for determining one or more physical features of the subset of the plurality of viewers; and
    - an audio sensor for determining one or more audible features of the subset of the plurality of viewers;
  - a database comprising a plurality of information files, each information file of the plurality of information files being targeted to at least one class of viewers associated with at least one of a physical feature and an audible feature;
  - an information file selection module for selecting one or more of the information files to display on the information display, based upon at least one determined feature of the subset of the plurality of viewers.
2. The information display system of claim 1, wherein the at least one sensor is configured to determine one or more of the features of the subset of the plurality of viewers even when the subset of the plurality of viewers are not taking purposeful action to direct the information file selection module to select the one or more information files.
3. The information display system of claim 1, wherein the one or more information files are displayed on the information display substantially contemporaneously with the determination of one or more of the features of the subset of the plurality of viewers.
4. The information display system of claim 1, wherein the one or more determined audible features include one or more words spoken by at least one viewer of the subset of the plurality of viewers.

1 5. The information display system of claim 4, further comprising a speech-to-text  
2 converter for converting the one or more words spoken to text, and wherein the information  
3 selection module compares the converted text against a list of keywords in conjunction with  
4 selecting the one or more information files to display.

1 6. The information display system of claim 1, wherein each information file in a subset  
2 of the plurality of information files in the database have associated keywords.

1 7. The information display system of claim 6, further comprising a parser for  
2 automatically identifying the associated keywords for each information file in the subset of  
3 the plurality of information files.

1 8. An information display system for targeting information to a plurality of viewers  
2 proximate to an information display, the system comprising:  
3 one or more audio sensors for determining one or more words spoken by at least one  
4 viewer in a subset of the plurality of viewers;  
5 an audio processing module for converting the determined one or more words  
6 spoken into text, and for identifying keywords in the converted text;  
7 a database comprising a plurality of information files, each information file having  
8 associated keywords; and  
9 an information file selection module for selecting one or more information files to  
10 display on the information display, based upon similarity between one or more of the  
11 identified keywords in the converted text, and one or more of the associated keywords of the  
12 one or more information files;  
13 wherein the one or more audio sensors are configured to determine the one or more  
14 words spoken by at least one viewer in the subset of the plurality of viewers, even when the  
15 subset of the plurality of viewers are not taking purposeful action to direct the information  
16 file selection module to select the one or more information files.

1 9. A viewer-targeted advertising system having a display for displaying advertisements  
2 to a plurality of viewers proximate to the display, the system comprising:

at least one sensor of attributes of a subset of the plurality of viewers, comprising at least one of:

a visual sensor for sensing physical attributes of the subset of the plurality of viewers;

an audio sensor for sensing audible attributes of the subset of the plurality of viewers;

a statistical modeling module for determining one or more representative demographics of the subset of the plurality of viewers, the one or more representative demographics being associated with at least one of the attributes of the subset of the plurality of viewers;

a database comprising a plurality of advertisements, each advertisement of the plurality of advertisements being associated with at least one demographic; and

an advertisement selection module for selecting one or more advertisements from the database for displaying on the display for the plurality of viewers, the one or more selected advertisements being associated with the one or more determined representative demographics.

10. The viewer-targeted advertising system of claim 9, wherein the statistical modeling module is configured to determine the one or more representative demographics even when the subset of the plurality of viewers are not taking purposeful action to direct the selection of advertisements.

11. The viewer-targeted advertising system of claim 9, wherein the statistical modeling module and the advertisement selection module are configured to substantially contemporaneously determine the one or more representative demographics and select the one or more advertisements, respectively.

12. The viewer-targeted advertising system of claim 9, wherein the statistical modeling module and the advertisement selection module are configured to work together so as to select the one or more advertisements based on contemporaneously sensed attributes of the subset of the plurality of viewers currently proximate to the display.

1 13. The viewer-targeted advertising system of claim 9, further comprising an audio  
2 signal processor for extracting voice sources from the subset of the plurality of viewers by  
3 processing the audible attributes sensed by the audio sensor.

1 14. The viewer-targeted advertising system of claim 13, wherein the audio signal  
2 processor utilizes Blind Source Separation.

1 15. The viewer-targeted advertising system of claim 13, wherein the audio signal  
2 processor further determines location information for the extracted voice sources, and  
3 further uses the determined location information to cluster sets of extracted voice sources,  
4 each clustered set of extracted voice sources being associated with a subset of the plurality  
5 of viewers.

1 16. The viewer-targeted advertising system of claim 13, further comprising a speech-to-  
2 text converter for converting speech patterns from the extracted voice sources to text.

1 17. The viewer-targeted advertising system of claim 16, wherein the statistical modeling  
2 module further identifies one or more keywords in the converted text, the keywords  
3 correlating to one or more demographics.

1 18. The viewer-targeted advertising system of claim 16, wherein the statistical modeling  
2 module further identifies one or more keywords in the converted text, the determined one or  
3 more representative demographics being defined at least in part by a subset of the identified  
4 one or more keywords.

1 19. The viewer-targeted advertising system of claim 9, including a computer vision  
2 module for processing a signal received from the visual sensor to determine physical  
3 attributes, including an approximation of at least one of the set consisting of clothing,  
4 gender, age, ethnicity, height, and weight.

1 20. The viewer-targeted advertising system of claim 19, wherein the computer vision  
2 module includes probabilistic logic to determine the approximation of the at least one of the  
3 set consisting of clothing, gender, age, ethnicity, height, and weight.

1 21. The viewer-targeted advertising system of claim 9, wherein the statistical modeling  
2 module utilizes Bayesian logic to determine the one or more representative demographics.

1 22. The viewer-targeted advertising system of claim 9, wherein the statistical modeling  
2 module uses heuristic logic to determine the one or more representative demographics.

1 23. The viewer-targeted advertising system of claim 9, wherein the statistical modeling  
2 module, in conjunction with determining the one or more representative demographics,  
3 associates a statistical weighting with each of a plurality of potential demographics, each  
4 statistical weighting representing a probability that the associated potential demographic  
5 accurately represents the subset of the plurality of viewers.

1 24. The viewer-targeted advertising system of claim 9, wherein the statistical modeling  
2 module further determines an approximate number of persons comprising the subset of the  
3 plurality of viewers by using at least one attribute of the subset of the plurality of viewers.

1 25. A method for targeting advertising to a plurality of viewers proximate to an  
2 advertising display, the advertising display for displaying advertisements from a database of  
3 advertisements, the method comprising:

4 determining one or more attributes of a subset of the plurality of viewers, the one or  
5 more attributes selected from physical attributes and audible attributes of the subset of the  
6 plurality of viewers;

7 determining one or more representative demographics of the subset of the plurality  
8 of viewers, the one or more representative demographics being associated with at least one  
9 of the determined attributes of the subset of the plurality of viewers;

10 selecting one or more advertisements from the database of advertisements associated  
 11 with the determined one or more representative demographics of the subset of the plurality  
 12 of viewers; and  
 13 displaying the one or more selected advertisements on the advertising display for the  
 14 plurality of viewers.

1 26. The method of claim 25, wherein the determining of the one or more representative  
 2 demographics occurs even when the subset of the plurality of viewers are not taking  
 3 purposeful action to direct the selecting of the one or more advertisements.

1 27. The method of claim 25, wherein the displaying of the one or more selected  
 2 advertisements occurs substantially contemporaneously with the determination of the one or  
 3 more attributes of the subset of the plurality of viewers.

1 28. The method of claim 25, wherein the determining of the one or more attributes  
 2 further comprises processing at least one audio signal received from one or more audio  
 3 sensors to extract voice sources from the subset of the plurality of viewers.

1 29. The method of claim 28, wherein the processing utilizes Blind Source Separation.

1 30. The method of claim 28, wherein the processing further comprises determining  
 2 location information for the extracted voice sources, and comprises using the determined  
 3 location information to cluster sets of extracted voice sources, each clustered set of  
 4 extracted voice sources being associated with a subset of the plurality of viewers.

1 31. The method of claim 28, wherein the processing further comprises converting  
 2 speech patterns from the extracted voice sources to text.

1 32. The method of claim 31, wherein the determining of the one or more representative  
 2 demographics further comprises identifying one or more keywords in the converted text, the  
 3 keywords correlating to one or more demographics.

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1 33. The method of claim 31, wherein the determining of the one or more representative  
2 demographics further comprises identifying one or more keywords in the converted text, the  
3 determined one or more representative demographics being defined at least in part by a  
4 subset of the identified one or more keywords.

1 34. The method of claim 25, wherein the determining of the one or more attributes  
2 further comprises processing a signal received from a visual sensor to determine one or  
3 more physical attributes of the subset of the plurality of viewers, the determined physical  
4 attributes including an approximation of at least one of the set consisting of clothing,  
5 gender, age, ethnicity, height, and weight.

1 35. The method of claim 34, wherein the processing further comprises using  
2 probabilistic logic to determine the approximation of the at least one of the set of clothing,  
3 gender, age, ethnicity, height, and weight.

1 36. The method of claim 25, wherein the determining of the one or more representative  
2 demographics comprises applying heuristic logic to the one or more determined attributes of  
3 the subset of the plurality of viewers to generate the one or more representative  
4 demographics of the subset of the plurality of viewers.

1 37. The method of claim 25, wherein the determining of the one or more representative  
2 demographics comprises applying Bayesian logic to the one or more determined attributes  
3 of the subset of the plurality of viewers to generate the one or more representative  
4 demographics of the subset of the plurality of viewers.

1 38. The method of claim 25, wherein the determining of the one or more representative  
2 demographics further comprises associating a statistical weighting with each of a plurality  
3 of potential demographics, each statistical weighting representing a probability that the  
4 associated potential representative demographic accurately represents the subset of the  
5 plurality of viewers.

- 1 39. The method of claim 25, further comprising determining an approximate number of  
2 persons comprising the subset of the plurality of viewers by using at least one of the  
3 determined attributes of the subset of the plurality of viewers.

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